Health and Recovery Services Administration
Washington State Department of Social and Health Services
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King County Care Partners Chronic Care Management Project

Savings/Cost Analysis

This report presents preliminary findings from a 9-month comparison of Health and Recovery Services Administration costs of two randomly assigned groups:

1. The first was **offered** chronic care management (referred to as the "offered treatment" group) with enrollment beginning in April 2007.
2. The second was not offered chronic care management immediately, but held for one year (called the abeyance group).

Key Findings

- Of those in the offered chronic care management group (839 clients), 18% (153 clients) received at least one month of chronic care management in the 9-month post period.
- The impact of **offering** chronic care management services in the program's initial 9 months of operation is estimated to have resulted in an average $36 per member per month increase in Health and Recovery Services Administration medical expenditures, less than a 3% change from baseline. The change is not statistically significant given the variability of costs within both groups.
- Those clients who actually received chronic care management from the group randomized to treatment (153 clients) were different from those who either didn't chose to participate or couldn't participate due to capacity limits. They were somewhat higher cost clients at baseline and subsequently experienced a greater cost decrease in the treatment period (a $131 per member per month decrease, also not statistically significant). Costs for unplanned hospital admissions declined the most. This suggests there is a subset of the target population that is both willing to engage and whose health care utilization may be impactable. Because there isn't a comparable randomly-assigned comparison group for these high-cost individuals, it can't be determined how much of the change was due to the treatment itself, a decrease normally expected for initially high-cost individuals, or other characteristics of this unique group.
- In the 9-month post period, there was a **statistically significant lower risk of death** among the clients randomly assigned to being offered chronic care management (p=.03).

Target Population

Clients targeted for the King County Care Partners Chronic Care Management Project were those who were a) eligible for aged/blind/disabled, categorically-needy, Medicaid-only medical benefits and not covered by another similar insurance policy, b) not receiving long-term care services from Aging and Disability Services Administration, and c) had previously been served at least once by a King County Care Partners organization in the past year. The top 20% of clients as identified by the ImpactPro risk score for being at risk of having future high medical expenses were selected for the pilot. Those with certain diagnoses were excluded (HIV/AIDS, hemophilia, pregnant women, those with end stage renal disease, and those receiving hospice services).

The cost-benefit analysis is limited to those targeted clients who had at least 1 month of medical coverage in both the baseline, or "pre" period, and the "post" period, when clients would receive chronic care management. In the baseline period, costs for 1,701 clients were identified - 839 clients in the offered treatment group and 862 in the abeyance group:

- average age was 51
- average ImpactPro risk score was 5.83
- average monthly expenditures were $1,340 in Medicaid medical expenses

Study Design and Methodology

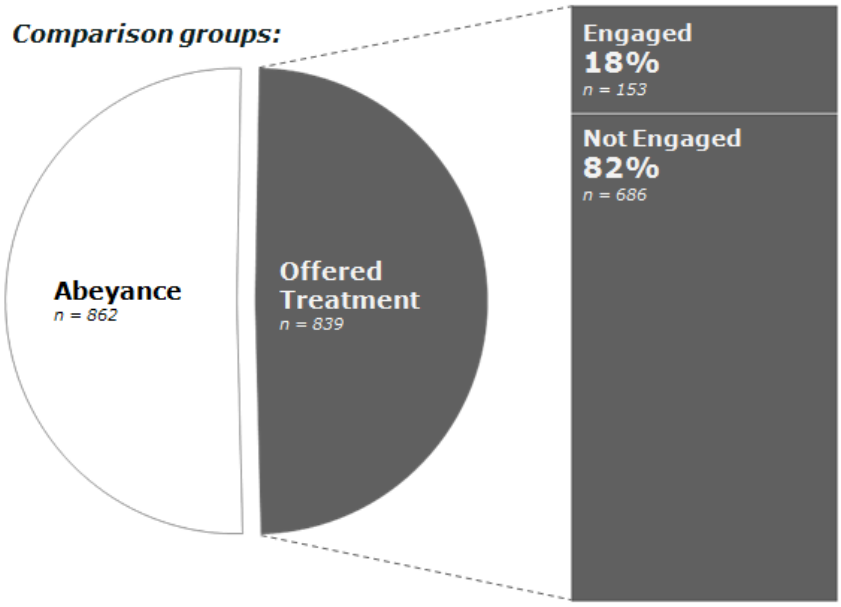
The study design used a pretest/posttest randomized control trial. The cost analysis used a proportional difference-in-differences with intent-to-treat design. This means cost savings were calculated as the proportional difference in changes in per member per month (pmpm) costs between the group randomly assigned to being offered treatment and the group randomly assigned to abeyance. The savings to cost ratio was calculated as total savings for the offered treatment group divided by the cost of providing chronic care management those who received it.

- The study was based on 9 months of experience, with a pre (baseline) period of April 1, 2006 to December 31, 2006 and post (intervention delivery) period of April 1, 2007 to December 31, 2007.

- The data source was Medicaid claims for services incurred through December 31, 2007 and paid through June 30, 2008. Certain claims-based inpatient hospital reimbursement amounts were adjusted, per usual policy, to better reflect the full cost of the inpatient stay.
- The post period per member per month figure was a weighted average, reflecting the actual number of post-period member months incurred by each client.

Results

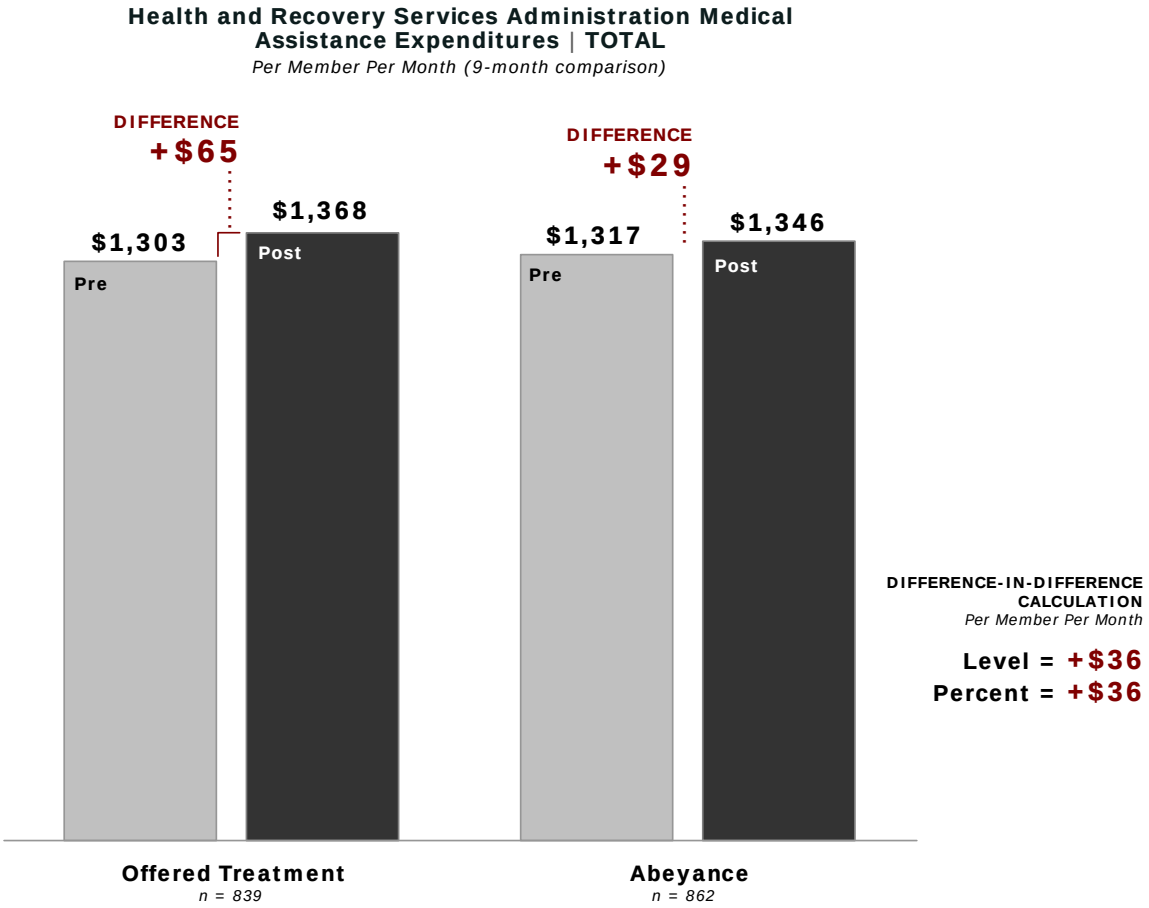
FIGURE 1
King County Care Partners Chronic Care Management Project Study Population
9-month comparison



SOURCE: DSHS Planning, Performance and Accountability Administration, Research and Data Analysis Division, September 2008.

FIGURE 2

King County Care Partners Chronic Care Management—No medical cost savings in preliminary results



SOURCE: DSHS Planning, Performance and Accountability Administration, Research and Data Analysis Division, September 2008.

TABLE 1

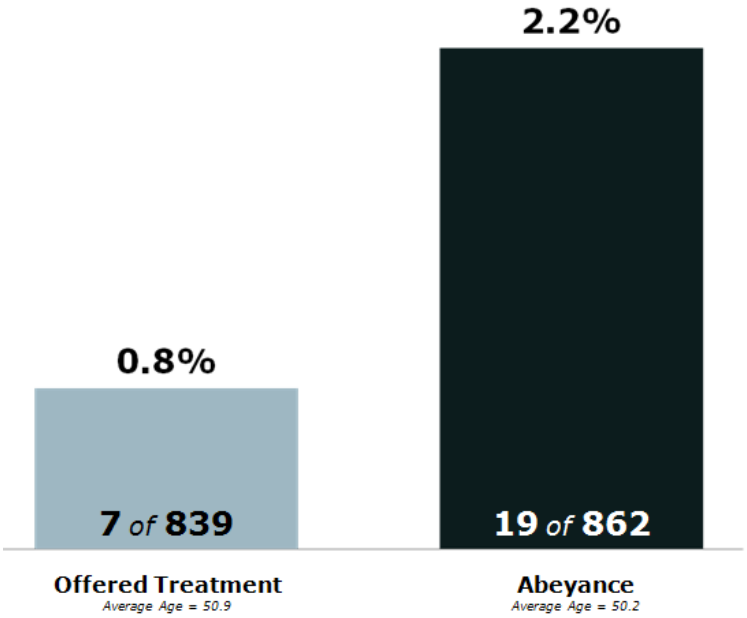
Health and Recovery Services Administration (HRSA) average per member per month (pmpm) cost comparison

	Randomized to Offered Treatment (n=839)			Randomized to Abeyance (n=862)					
Measure	Pre PMPM	Post PMPM	Dif PMPM	Pre PMPM	Post PMPM	Dif PMPM	Level Dif-in-Dif PMPM	p-value	Percent Dif-in-Dif PMPM
HRSA expenditures (Total)	$1,303.01	$1,367.54	$64.53	$1,316.70	$1,345.60	$28.90	$35.63	0.774	$35.93
Selected subset of HRSA expenditures:									
Outpatient Emergency Department (ED)	$71.34	$77.79	$6.45	$75.29	$79.19	$3.90	$2.55	0.740	$2.75
Inpatient (admitted through ED)	$344.75	$376.28	$31.53	$360.94	$331.78	-$29.16	$60.69	0.456	$59.38
Inpatient (not admitted through ED)	$169.89	$146.31	-$23.58	$150.33	$189.93	$39.60	-$63.18	0.291	-$68.33

* Calculated as the percent change in "offered treatment" minus the percent change in "abeyance", times the "offered treatment" pre period per member per month (pmpm).

Note: Statistical significance for this study is indicated by a p-value equal to or less than .05. Other values indicate the probability the difference could be caused by chance alone, given the variability in the data.

FIGURE 3
King County Care Partners mortality rate was significantly lower for the offered treatment group (p = .03)
Percent of clients dying in 9-month follow-up period



SOURCE: DSHS Planning, Performance and Accountability Administration, Research and Data Analysis Division, September 2008.

Discussion

The structure of the evaluation was not a test of the intervention itself, but of the policy of making chronic care management available to a high-risk population. To realize cost savings at the level of offering a service, the client participation rate needs to be fairly high and the changes in health care utilization - thus costs - of those who do participate fairly robust.

In this study:

- 18% of targeted clients were served, a low percent of those targeted. Reasons cited for not receiving chronic care management included: slower than expected care management capacity building at the start-up of the program, inability to locate clients and unwillingness of clients to participate.
- Those actually receiving chronic case management (153 clients) had a somewhat higher baseline cost profile than those in the "offered treatment" group but not served (686 clients). At baseline in the pre period, they had higher average per member per month costs ($1,491 pmpm versus $1,259, respectively), marked by somewhat higher costs

associated with unplanned admissions to the hospital through the emergency room ($422 pmpm versus $327) and planned hospital admissions ($283 pmpm versus $143).

- The 153 clients receiving chronic care management had a proportional average reduction of $131 pmpm over the 686 clients who did not receive the intervention in the offered treatment group. However, given the evaluation design, it cannot be determined if the change was due to the treatment itself or a decrease normally expected for high cost individuals. These results cannot be assumed to hold for those not receiving chronic care management, but does suggest that there is a subgroup of clients who are both willing to engage in care management and amenable to possible treatment effects.

A surprising finding, and a statistically significant one, is that those in the offered treatment group experienced lower mortality in the post (intervention) period than those in the abeyance group (0.8% versus 2.2%, respectively). Regardless of randomized group, those who died in the 9-month intervention period (26 clients) had very high baseline costs at the start compared to surviving counterparts ($4,086 versus $1,297, respectively) and incurred higher average costs in the post period when they died ($8,534 versus $1,333, respectively).

Summary

The early findings of the King County Care Partners Chronic Care Management Project points to the pilot of **offering** chronic care management not significantly changing costs to the state and linked to lower mortality for a high-risk vulnerable population.

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